FINAL IWRB ACTIONS AND RECOMMENDATIONS

Consistent with the objectives of this plan and with substantial input from the Advisory Group and the public hearing process, the Board takes the following actions and recommendations to protect and manage the water resources of the upper Boise River basin in the public interest. The river protection designations and actions were developed from the draft alternatives described in the previous section.

1. Designations of State Protected Waterways (Fig. 4)

A. Boise River (13.2 miles)

The main Boise River from the backwaters of Arrowrock Reservoir to the confluence of the North and Middle Forks of the Boise River is designated as a state Recreational River, and is conditioned to allow alteration of the streambed for construction and maintenance of bridges and culverts. The Board shall prohibit the following activities on the aforementioned reach:

- Construction or expansion of dams or impoundments
- Construction of hydropower projects
- Construction of water diversion works
- Dredge or placer mining
- Mineral or sand and gravel extraction within the streambed

B. Sheep Creek and tributaries (17.8 miles)

Sheep Creek, mouth to terminus of perennial water, and the following tributaries are designated as state Natural Rivers:

- South Fork Sheep Creek to terminus of perennial flow
- Devils Creek to terminus of perennial flow
- East Fork Sheep Creek to terminus of perennial flow

C. Middle Fork Boise River (14.5 miles)

The Middle Fork Boise River from its confluence with the North Fork Boise River to the mouth of Roaring River is designated as a state Recreational River, and is conditioned to allow alteration of the streambed for construction and maintenance of bridges and culverts. The Board shall prohibit the following activities on the aforementioned reach:

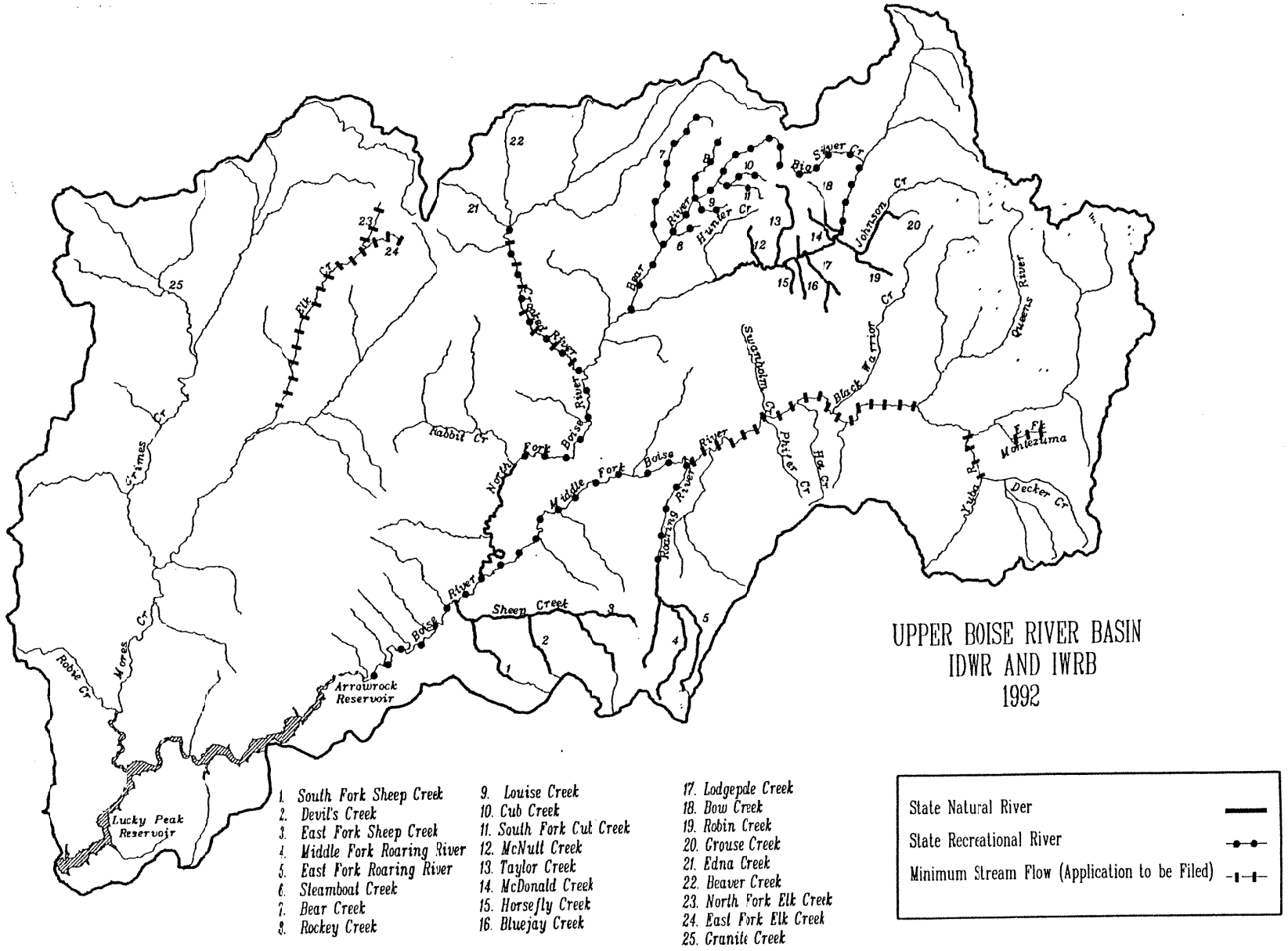

Figure 4: Protected Rivers Designations and Minimum Stream-Flow Reaches

- Construction or expansion of dams or impoundments
- Construction of hydropower projects
- Construction of water diversion works
- Dredge or placer mining
- Mineral or sand and gravel extraction within the streambed

D. Roaring River (5.6 miles)

The Roaring River from its confluence with the Middle Fork Boise River to the point where Forest Service road 255 crosses Roaring River is designated as a state Recreational River, and is conditioned to allow alteration of the streambed for construction and maintenance of bridges and culverts. The Board shall prohibit the following activities on the aforementioned reach:

- Construction or expansion of dams or impoundments
- Construction of hydropower projects
- Construction of water diversion works
- Dredge or placer mining
- Mineral or sand and gravel extraction within the streambed

E. Roaring River and tributaries (17.0 miles)

The Roaring River and tributaries from the point where Forest Service road 255 crosses Roaring River to its headwaters and the following forks are designated as a state Natural Rivers.

- East Fork Roaring River to Little Roaring River Lake
- Middle Fork Roaring River to Twin Sisters Lake

F. North Fork Boise River (9.1 miles)

The North Fork Boise River from its confluence with the Middle Fork Boise River to the mouth of Rabbit Creek is designated as a State Natural River.

G. North Fork Boise River (9.1 miles)

The North Fork Boise River from the mouth of Rabbit Creek to the mouth of Crooked River is designated as a state Recreational River, and is conditioned to allow alterations of the streambed for construction and maintenance of bridges and culverts. The Board shall prohibit the following activities on the aforementioned reach:

- Construction or expansion of dams or impoundments

- Construction of hydropower projects
- Construction of water diversion works
- Dredge or placer mining
- Mineral or sand and gravel extraction within the streambed

H. North Fork Boise River and tributaries (28.6 miles)

The North Fork Boise River from the mouth of Hunter Creek to the mouth of Johnson Creek and the following tributaries are designated as state Natural Rivers.

- McNutt Creek to terminus of perennial flow
- Taylor Creek to terminus of perennial flow
- McDonald Creek to terminus of perennial flow
- Horsefly Creek to terminus of perennial flow
- Bluejay Creek to terminus of perennial flow
- Lodgepole Creek to terminus of perennial flow
- Bow Creek to terminus of perennial flow

I. North Fork Boise River and tributaries (8.4 miles)

The North Fork Boise River from the mouth of Johnson Creek to the boundary of the Sawtooth Wilderness Area and Big Silver Creek, mouth to headwaters, are designated as state Recreational Rivers, and are conditioned to allow alterations of the streambed for the construction and maintenance of bridges and culverts. The Board shall prohibit the following activities on the aforementioned reach:

- Construction or expansion of dams or impoundments
- Construction of hydropower projects
- Construction of water diversion works
- Dredge or placer mining
- Mineral or sand and gravel extraction within the streambed

J. Crooked River (10.1 miles)

The Crooked River from its mouth to the mouth of Edna Creek, is designated as a state Recreational River, and is conditioned to allow alterations of the streambed for the construction and maintenance of bridges and culverts; and dredge or placer mining and recreational dredge mining. The Board shall prohibit the following activities on the aforementioned reach:

- Construction or expansion of dams or impoundments

- Construction of hydropower projects
- Construction of water diversion works
- Mineral or sand and gravel extraction within the streambed

K. Bear River and tributaries (30.0 miles)

The Bear River from its mouth to terminus of perennial flow and the following tributaries are designated as state Recreational Rivers, and are conditioned to allow alterations of the streambed for the construction and maintenance of bridges and culverts; and dredge or placer mining and recreational dredge mining.

- Bear Creek to terminus of perennial flow
- Rockey Creek to terminus of perennial flow
- Cub Creek to terminus of perennial flow
- South Fork Cub Creek to terminus of perennial flow
- Louise Creek to terminus of perennial flow
- Steamboat Creek to terminus of perennial flow

The Board shall prohibit the following activities on the aforementioned reaches:

- Construction or expansion of dams or impoundments
- Construction of hydropower projects
- Construction of water diversion works
- Mineral or sand and gravel extraction within the streambed

L. Johnson Creek and tributaries (7.9 miles)

Johnson Creek from its mouth to the Sawtooth Wilderness Area boundary and the following tributaries are designated as state Natural Rivers.

- Robin Creek to terminus of perennial flow
- Grouse Creek to terminus of perennial flow

2. Protection of Minimum Stream Flows. Processing of these minimum stream flows is dependent upon the data and resources available to supporting agencies, and workloads of the staff at IDWR. The Idaho Water Resource Board will make applications for permit to maintain minimum stream flows on the following stream segments:

A. Middle Fork Boise River from the mouth of Roaring River to the mouth of Queens River (16.3 miles), for the purposes of fish spawning and rearing and maintaining recreational quality.

B. Yuba River from the confluence with the Middle Fork Boise River to the mouth of Decker Creek (2.8 miles), for the purposes of maintaining water quality and fish spawning habitat.

C. East Fork Montezuma Creek from city of Atlanta's diversion Sec. 2, T 05 N, R 11 E, to its headwaters (1.9 miles), for the purpose of protecting Atlanta's water supply.

D. Crooked River from the confluence with the North Fork Boise River to the mouth of Edna Creek (10.1 miles), for the purposes of fish spawning and rearing.

E. Elk Creek from Idaho City's diversion in Sec. 26, to the headwaters, T 06 N, R 05 E, and the following tributaries (15.4 miles), for the purpose of protecting Idaho City's water supply.

- North Fork Elk Creek to its headwaters
- East Fork Elk Creek to its headwaters

3. Recommendations

A. The Water Resource Board will nominate the Boise River and the Middle Fork Boise River from Kirby Dam to the backwaters of Arrowrock Reservoir to the Water Quality Advisory Working Committee for designation as a Stream Segment of Concern (SSOC) because of the sediments and toxic chemicals released when Kirby Dam failed.

B. The Water Resource Board will retain the Twin Springs project in the State Water Plan as a potential water storage site. Furthermore, if the need for the project can be demonstrated and found to be in the public interest, the protected river designation in this basin plan could be amended.

C. The Water Resource Board recommends that priority be given to construction of new power facilities at existing dams, such as Arrowrock.

D. In 1982, the State Board of Land Commissioners withdrew the Boise River and the Middle Fork Boise River from Arrowrock Dam to Roaring River from mineral entry and exploration to protect recreation and public use. Recently, there has been interest in opening this section up to recreational dredge mining. The IDFG is opposed to opening the reach because of concerns for the sensitive fishery (made more sensitive by the Kirby Dam failure). The IDPR has serious questions about impact on the aesthetics and current recreational use. The federal Bureau of Reclamation, which has withdrawn lands along the river, has no objection to recreational dredge mining in the channel. The North Fork Boise River is not withdrawn from entry but is currently closed to mining through the recreational dredging one-step permit system.

The IWRB is not necessarily opposed to recreational dredge mining on the Boise and Middle Fork Boise rivers. However, relying on input from IDFG and IDPR, the Board does not wish to seek a change at this time. The Board does recommend that the IDL review the status of the North Fork Boise River with regard to opening it to recreational dredge mining (Appendix C, Table 40, p. C-55 for listing).

E. Since 1980, there has been a moratorium placed on granting further consumptive water rights during the irrigation season above Lucky Peak Dam by IDWR. In the spring of 1992, the moratorium was extended to year-round because of the current severe drought conditions in southwestern Idaho. The Water Resource Board recommends that the moratorium be retained beyond the end of the current drought, and that no new consumptive water rights be granted in the upper Boise River basin except for domestic purposes.

F. Crooked River and the North Fork Boise River have been designated Stream Segments of Concern (SSOC) because of sediments originating from highway runoff into Beaver Creek. Mores Creek (adjacent to the highway) is vulnerable to scenic degradation, sedimentation and highway runoff. The Water Resource Board recommends that the IDT take special effort to protect the Mores and Beaver Creek corridors, because of the proximity to Highway 21, a State Scenic Byway, and to reduce sedimentation and toxic loading into both Mores Creek and Beaver Creek.

G. Timber harvesting has intensified on the Boise National Forest and on state lands because disease and drought have produced unhealthy forests. Good watershed management is

particularly critical during periods of forest stress to maximize the amount of water getting to the trees. The Water Resource Board encourages the Boise National Forest and the Idaho Department of Lands to seek strict adherence of their contractors to the Forest Practices Act, the Antidegradation Agreement, and applicable BMPs involving logging activities.

H. The Water Resource Board recommends that the U.S. Forest Service and other resource management entities establish limits of acceptable change for those reaches impacted by recreation use. The anticipated population growth for the Boise area will put additional pressure on the recreational resources of the basin.

Responses to Basin Objectives, Issues, and Considerations

Water Quality

Water quality is not currently a major issue in the basin but there are several reaches that could eventually face serious problems. Minimum stream flows are recommended for sensitive water supplies above Idaho City and Atlanta and for those reaches that possess potentially threatened fisheries and recreational assets, such as the Crooked River and the Middle Fork Boise River. The Middle Fork Boise River above the Recreational protected segment, will have a minimum stream flow and a recommendation for a Stream Segment of Concern designation to address the water quality concerns below Kirby Dam.

Hydropower

Prior to the districts voluntarily surrendering their preliminary permit for Twin Springs hydroelectric project to FERC (Olowinski, 1991), the main hydropower controversy in the basin centered around Twin Springs. The permit surrender followed an economic analysis done by Morrison-Knudsen on the feasibility of the project. It concluded the project was not economically feasible at this time. The actions of the Board regarding Twin Springs leave open the opportunity for going ahead with the project should it be demonstrated at a later date to be hydrologically and economically feasible, and in the public interest.

Recreation

Public and agency input received during the planning process identified the recreational opportunities in the basin as one of the more highly-valued qualities. Specifically, scenic values, wilderness, proximity to populations, fisheries, wildlife, access, opportunities for seclusion and hot springs were mentioned. Potential impacts and issues cited relative to these values include over-use, increased population, maintenance needs of existing facilities, need for more developed facilities, and protection of primitive areas.

The actions by the Board will help protect reaches that currently and potentially receive the greatest recreational use, namely the Middle and North Forks of the Boise River.

Fish, Wildlife and Aesthetics

There is considerable public concern about the potential for deterioration of the fish and wildlife habitat and aesthetic quality of the basin. The Main, Middle and North Forks of the Boise River, because of accessibility, are likely candidates to receive considerable pressure in the future from recreation. Logging activity will undoubtedly accelerate in the next few years because of Boise National Forest's need to move swiftly to manage an ill forest. The actions and recommendations by the Board, by focusing on the critical reaches, have improved the likelihood that future impacts to the biological and aesthetic qualities of the waterways, will be as minimally detrimental as feasible.

Economics

Contribution of Hydropower and Energy Conservation: Hydropower has the reputation of being a clean and renewable form of energy. Traditionally, hydropower projects provide jobs and can add to the local tax base. The Twin Springs Project, if it were ever to be built, would be located on the Boise and Elmore County lines. Both counties suffer from rather depressed economies, particularly Boise County (Table 13). If the Twin Springs project were built, there is no guarantee that the work force would come from the two rural counties, rather than the City of Boise.

Table 13. **Annual Unemployed Labor Force and Income % of National Averages for Boise, Elmore and Ada Counties (Idaho Dept. Commerce, 1989).**

County	1988 % Labor Force Unemployed	1987 Income % of National Average
Boise	8.4	68.5
Elmore	5.0	67.1
Ada	3.9	95.4

The hydroelectric benefits from Twin Springs were estimated in a recent study done by Boise-Kuna Irrigation District et al. (1990). The estimated initial annual revenue from hydropower production, based on a medium level energy value [32 (off-peak) to 49 (summer) mills/kWh], was $11,847,000. Values for other benefits were estimated at $1,000,000 for irrigation, $75,000 for flood control, $177,000 for recreation and $250,000 for water quality (Boise-Kuna Irrigation District et al., 1990). Annual values for all benefits totalled an estimated $13,349,000.

The Northwest Power Planning Council (NWPPC) in the 1991 draft of their Northwest Conservation and Electric Power Plan, ranked the top 40 available energy resources over the next 20 years. The resource category for nine of their top ten was conservation, one was small hydropower. Only about 5% of the forecast total megawatt production would come from small hydropower generation.

Given the results of the irrigation districts' 1990 study and NWPPC's prognosis for the energy future of the Northwest, the Board does not consider the economic potential for hydropower in this basin to be great in the near future. However, the Board did identify the Twin Springs Reservoir site in the 1992 State Water Plan as a potential reservoir site. It does not preclude Twin Springs should it ever become necessary for additional storage and power and is demonstrated to be economically and hydrologically feasible. The project would have to be found to be in the public interest by the Water Resource Board and this basin plan would have to be amended. The amendment process will include public hearings and legislative review. Furthermore, it is a policy of the Board to support and give priority to construction of power facilities at existing dams, such as Arrowrock (Policy 4E-State Water Plan, 1992).

Contribution of Mining: Currently, the only major mining project that shows serious intentions in the basin is backed by Atlanta Gold Corporation. In 1989, two engineering firms from Denver conducted an economic feasibility study on the Atlanta gold and silver reserves and estimated reserve figures of 1,024,000 ounces of gold and 2,516,000 ounces of silver (Atlanta Gold Corp., 1991). At $375 or $400/ounce for the gold, they calculated that an open pit mining operation would be economically feasible.

Contribution of Recreation and Tourism: The 1987 Idaho Leisure Travel and Recreation Study concluded that travelers visiting the southwest region of the state, which would include the Boise River basin, spent an average of $172 over a two day period. The state average was $149 with the highest region being the Sun Valley area with an average of $256.

Tourism contributes approximately $1.5 billion to Idaho's economy in 1991 making it Idaho's third largest industry (Bond, 1992). Average expenditures on each trip totaled approximately $482 per individual (IDC, 1991).

An approximation of the average net economic value for recreational activities within the planning basin are quantified in Table 14. These values represent the average consumer surplus or net willingness to pay above actual expenditures for the recreational experience taking into account travel time and distance. Net economic values for the upper Boise River basin approximated $38 million based on 1991 recreation participation in the basin (Table 14). This value is based on the estimated use for various recreational activities as calculated by the Boise National Forest and BLM, the USACE for Lucky Peak facilities in the basin, and the IDFG for the Boise Wildlife Management Area and hunter days for big game, upland game and upland birds. Because recreational use is derived differently by different management agencies, the calculations for the estimated use values in Table 14 are not included here but can be obtained from IDWR planning staff.

Table 14. Estimated Average Net Economic Use Value* of Recreation Activities in the Upper Boise River Basin. Real 1991 dollars are derived from recreational use data from following sources: USDA, 1991b; USDI, 1992; Scholten, 1992; USACE, 1992; IDFG, 1990; Sorg and Nelson, 1986; Donnelly and Nelson, 1986; Sorg et al., 1985; Young et al. 1987; and Sorg and Loomis 1984.

Activity	1991 Estimated Annual Use Value
Camping	$2,850,500
Trail Use	
Motorized	550,800
Non-motorized (hiking, horseback riding, biking)	995,900
Boating	
Motorized	2,930,600
Non-motorized	2,524,700
Hunting[1]	
Big Game	3,874,800
Upland Bird/Game	2,012,400
Fishing	4,317,900
Water Play (swimming, water skiing, diving, beach)	2,139,600
Winter Recreation (snowmobiling, cross country skiing, sledding, snowplay)	746,300
Pleasure Driving	1,031,400
Picnicking	1,862,200
Other Land-based (sightseeing,nature study, sports, tours, gathering forest products, miscellaneous)	12,159,500
TOTAL	**$37,996,600**

* Economic use value = average consumer surplus value.

[1] Based on 1990 hunter days.

This method of recreational economic value does not consider nonconsumptive values such as for preservation, option or bequest. It does give an approximation of the benefits of recreation in the basin compared to other resource uses. This approach is the standard measure used in cost-benefit analyses by the USACE, Bureau of Reclamation, Soil Conservation Service and Forest Service (Young et al., 1987).

Effects of Final Actions and Recommendations

In designating a natural river, the Board prohibits the following activities: construction or expansion of dams or impoundments; construction of hydropower projects; construction of water diversion works; dredge or placer mining; alterations of the streambed; and mineral or sand and gravel extraction within the streambed (Idaho Code, Sect. 42-1743A). In designating a recreational river, the Board determines which of the above mentioned activities shall be prohibited, and which activities, if any, may go forward. In this plan, recreational river designations are all conditioned to allow alterations of the streambed for construction and maintenance of bridges and culverts. The Board has elected to prohibit the remaining above listed activities on recreational rivers protected by this plan.

With a natural or recreational protection designation of state waterways in place, proposed activities that would occur within the stream channel (between high water marks) could be affected and even prohibited. While protection itself cannot limit, restrict, or conflict with approved application for water appropriation or vested property rights on the date of enactment (Idaho Code, Sect. 42-1734F), once a stream channel is protected, a land management agency, such as the USFS or BLM, may choose to strengthen their management practices if they feel the values that led to the designation are being threatened.

Even though the authority of the Water Resource Board does not extend beyond a protected waterway, agencies and entities responsible for the management of the watershed containing protected reaches are encouraged to follow the Board's recommendations and continue to exercise good environmental stewardship to ensure the preservation of the outstanding values that support those designations.